

Cedar River Instream Flow Commission

Final Minutes

SPU Water Quality Lab

March 4th, 2009

Organizations/Members Present:

- Seattle Public Utilities (Rand Little, Karl Burton)
- King County Dept. of Natural Resources and Parks (Steve Hirschey)
- Muckleshoot Tribe (Holly Cocolli)
- NOAA Fisheries (Tom Sibley)
- Seattle City Light (Liz Ablow)
- Washington Department of Ecology (Jay Cook)
- U.S. Army Corps of Engineers (Larry Schick)

Guests:

- Nick Gayeski (Wild Fish Conservancy)
 - Brian Kennedy, by phone (University of Idaho)
 - Chris Konrad (The Nature Conservancy/USGS)
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- I. Call to Order:** Rand Little called the meeting to order at 9:45 AM.
- II. Approval of Agenda:** Rand said that Tom Fox was sick with the flu and, therefore, the discussion regarding January flood operations will be postponed until the next meeting.
- III. Approval of Draft Minutes:** Jay asked Rand to change the wording in the news and notes section that described the delay of the Lake Tapps pipeline. Rand said he would make the desired changes and the notes would then be considered final.
- IV. News and Notes:** Holly mentioned that the Army Corps of Engineers recently hosted a symposium on levee vegetation management and the Endangered Species Act. The symposium included a panel with representatives from local Tribes, USFWS, NOAA Fisheries, local cities, counties, ACOE Division General, ACOE lawyers and engineers and WDFW. The panel discussed water temperature issues as they pertain to levees, groundwater and vegetation. The ACOE General directed the local Colonel to address the issues and the ACOE is in the process of deciding where to locate some pilot projects. Snohomish County had some pilot projects that

were already successful. Some participants felt that the topics should be expanded beyond the issue of vegetation to include other ecological processes impaired by levees and the potential need to remove and set back levees.

Tom Sibley reported that NOAA had recently met with FEMA in Olympia to discuss how federal agencies will move forward in implementing the recent court decision on constraining the issuance of flood insurance in areas where floodplain development impacts ESA listed species.

Rand mentioned that the Instream Flow Council had recently released a book entitled “Integrated Approaches to Riverine Resource Stewardship”. Rand said that the book was highly informative and included the Cedar River as one of eight case studies. The authors previously visited the Cedar, met with the IFC and received substantial input of materials from SPU, and other IFC representatives.

V. Real Time Water Management

Hydrologic Conditions for Tolt and Cedar: Rand reported that February was quite dry and that a dry pattern has dominated the weather for the last 6 weeks. This February was the 2nd driest on record. The Chester Morse Reservoir elevation is very close to the rule curve. The 8-week moving average for inflows to the reservoir is high due to the fact that it still incorporates the very high flow event in January. The 4-week moving average for inflows shows the more recent trend in low inflows to the reservoir. Currently, snowpack in the Cedar River Basin is 75% of normal for this time of year. SPU is concerned and watching the snowpack very carefully. The Tolt River Basin is doing better in terms of snow but is still not approaching normal levels for this time of year. Older snow gages are showing lower percentages of normal due to the longer record, which has a higher average snowpack. Regionally, the snowpack is around 85% normal. Instream flows have been held just over the supplemental flow level for sockeye outmigration. During the recent dry period, estimated unregulated flows have been very close to actual gauged flows. There have been no downramping violations in the last month.

Rand mentioned that the Consumption Graph now had a new line, as previously requested by the IFC, representing average consumption from 1998 to 2007. Cumulative diversion is tracking slightly lower than last year’s cumulative diversion for this date. Rand pointed out a small spike in the consumption graph that was likely the result of the recent cold snap that prompted some people to run their taps and also caused some broken pipes.

SEAFM model runs representing 2 refill strategies showed that a refill strategy with refill beginning on April 1st will increase the probability of the reservoir not being full to 1560’ this summer. If refill doesn’t begin until April 1st, the 1 in 10 and 1 in 20

dry scenarios will not refill the reservoir whereas, the 1 in 4 dry scenario will likely fill the reservoir to just over 1560'. The second model run assumed that refill would begin this week and this run indicates that only the 1 in 20 year dry scenario will fail to refill the reservoir. The 1 in 10 year dry scenario will fill the reservoir to 1560 and the 1 in 4 dry scenario will fill to 1563'. SPU will begin refilling this week if reservoir inflows are sufficient.

Lake Washington: Larry reported that Lake Washington's elevation was 20.67' and on target to fill to between 21.9' and 22.0' by mid- to late May. Smolt flumes will be operational by April 17th. Divers will soon install repairs to the fish screens on the saltwater intake that address the problem of keeping fish out of the diffuser well. The fish screens should be fully operational by June 5th. Lynne will explain the problems and the fixes regarding the fish screens at the next meeting. Fish ladder maintenance should be completed soon and spillway 5 will be operated to attract fish to the fish ladder entrance as in past years.

Fish Update: Karl reported that the first 2009 Cedar River steelhead and trout redd survey will be performed next Monday. Rand reported that early outmigration numbers indicate a very low survival for incubating and outmigrating sockeye fry, which looks very comparable to the survival rate recorded for 1995 of 1.9%. The sockeye spawning escapements in 2008 and 1995 were also both very low. The 2008 escapement was the lowest on record and 1995 the second lowest. Production in both these brood years was hampered by high peak flow events and low escapement. However, in 1995 there were 5 million hatchery sockeye fry whereas, in 2008, there are only 2.5 million.

Karl and Rand talked about their float of the Cedar River last month. Spawning gravel has been depleted for reaches in the upper third of the river below Landsburg. There are some small patches of gravel in those reaches but areas that once had abundant gravel for spawning are now large cobble and boulder substrates. Substantial amounts of wood have been recruited to the active channel in several areas and some log jams have caused blockages for the survey raft. There are now several areas where extensive portages are required to avoid full spanning logs. Karl mentioned that the high flows had cut a large side channel in the Dore Don meander reach on forested County property. Karl estimates the channel to be ¼ mile long and that approximately 25% of the river volume is flowing in the side channel. King County's levee setback and LWD project at Cedar Rapids has changed extensively from the flood event. The mainstem now runs through the site that used to be Ricardi Pond. Many logs were recruited by King County's project logs that were chained to ecology blocks on site, although some project logs appear to have moved downstream below the original project site. Habitat complexity appears to have increased in the project area, especially in the upper half where a new side channel

and a fairly large backwater area have been formed. Substantial amounts of large wood have also been recruited to the channel in the upper half of the project.

Forecasts and Water Supply Outlook: Larry reported that the ACOE recorded a record high for pool elevation behind the Howard Hansen Dam during January's flood. After drawdown of the reservoir, Corps staff noticed 2 sink holes behind the earthen dam. The origin and consequences of the sinkholes is unknown at this time. The Corps is planning some testing to see what kind of risk the sinkholes represent to dam safety. Due to the testing and pending the outcome of the tests, the reservoir might not be held at full pool level this summer. In the future, the Corps may have to pass more water during floods to avoid the sinkholes' elevation and this will likely increase the probability of overtopping and breaching levees in the floodplain downstream. Potential fixes may take up to 5 years and up to 1 billion dollars. The sinkhole problem is one of the Corps' highest priorities for 2009.

Larry said that the end of major flood season has arrived although some rivers on the Olympic Peninsula have had major floods in the spring. Moderate floods do sometimes occur at this time of year as exemplified by last year's spring floods caused by melting of a massive snowpack. Forecasters are reporting that this spring has changed to a weak La Nina pattern with cooler than normal temperatures and normal precipitation expected through June. Larry said the short term forecast is for 0.1" to 0.5" of rain tomorrow with snow level dropping to 2000'. No rain is expected on Friday, but on Saturday the forecast is for 0.1" to 0.7" of rain and a snow level dropping to 500'. Sunday, Monday and Tuesday are forecast to be dry with rain returning on Wednesday and Thursday.

VI. Update on Supplemental Studies:

Otolith Study: Rand provided a brief summary of work completed during the first two years of the project. The work focused on proof of concept and assessing the likelihood that the proposed methodology will be capable of using adult otoliths to accurately distinguish Cedar River Chinook juvenile life history patterns. Nick reported that the 7 adult otoliths, analyzed as part of the previous work, coupled with the water quality and juvenile Chinook otolith analyses indicate that the technique has a high likelihood of success. The associated data and analyses are provided in the two project interim reports submitted to the IFC by Nick and Brian.

Nick reviewed the previously distributed proposal to analyze 50 additional adult Chinook otoliths and use the results to estimate relative survival rates based on the proportions of outmigrating fry and parr from the sampled broodyear. Nick said that he intends to sample otoliths from one broodyear by taking samples from adults aged 3, 4 and 5 years from the chosen broodyear. Karl said that he thought 50 otoliths might not be enough to guarantee an adequate sample to provide statistically

significant results for each age class and life history strategy. Karl also thought it might be useful to compare survival among age classes before lumping them together because ocean conditions may have differential effects for 3-year-olds and 4-year-olds from the same broodyear.

The IFC agreed to move forward with the next phase of the work as outlined in the draft scope submitted by Nick and Brian. Rand said that it may be useful to have a subgroup made up of IFC members and other interested parties to determine the best broodyear to sample. Holly said that Eric Warner would likely want to be part of that discussion. Tom Sibley volunteered to participate. Rand said that he would invite Eric, Karl and Steve Foley to be part of the subgroup. The objective would be to deliver otoliths from the chosen broodyear by May 1st.

IHA Flow Data Set: Steve H. said that King County staff have reviewed the IHA flow data sets and thinks they are acceptable for IHA analyses but there were some questions about management decisions at high flows, data splicing and the way demand is represented. Holly said that the Muckleshoot Tribe is OK with the data sets and thinks the splicing is not a problem because it is only done for 5% of peak flow events. Steve offered to provide to the IFC the URL for the King County Normative Flow project, which may help provide guidance in assessing the ecological significance of differences in regulated and unregulated flows. The IFC agreed to move forward with the project using the existing pre- and post-development data sets.

Holly suggested that parameters such as 7-day mean maximum flow and related metrics might promote understanding of the relative importance of flow duration. She also hopes to see the study address the effects of smaller peak flows with longer durations on parameters such as, side channel connectivity, early juvenile rearing conditions, outmigration survival and scour.

Rand said he will attempt to conduct initial analyses of the pre- and post-development flow data sets using the standard IHA software and present preliminary output at the next meeting. If necessary, we can consider recruiting an expert review of the IHA outputs and interpretation.

Adaptive Management Program Conceptual Model for Peak Flow Study:

Chris McGirl was sick today so Chris Konrad and Rand presented a conceptual model of the peak flow adaptive management study. The model is designed to help the IFC make choices regarding the ecological parameters they want to measure to reflect changes in the river caused by changes in peak flow management strategies. Rand asked the IFC to consider the 2 lists of ecological parameters provided in the e-mail packet so there can be a good discussion at the next meeting. One of the fundamental challenges of the conceptual model is to make it sufficiently robust

without making is so complex that we are unlikely to acquire sufficient data to support reasonable confidence in the model projections. Tom Sibley suggested that, for the biological parameters, it might be best to start with a more exhaustive, comprehensive list, then narrow the list to a subset of what we believe are the highest priority parameters.

VII. Agenda Items for Next Meeting:

- 1) Review of January's flood by Tom Fox
- 2) Nancy Faegenburg (King County) will talk about the effects of the floods on the Cedar Rapids Project and other King Co. restoration projects.
- 3) Discussion of IHA ecological parameters to monitor.

VIII. Meeting adjourned at 1:15 PM